(12) INTERNATIONAL APPLICATION PUBLISHED UNDER THE PATENT COOPERATION TREATY (PCT)

(19) World Intellectual Property Organization
International Bureau

(43) International Publication Date
20 December 2001 (20.12.2001)

PCT

(10) International Publication Number
WO 01/97491 A1

(51) International Patent Classification[7]: H04M 1/57, 1/66, H04Q 7/32

(21) International Application Number: PCT/KR00/00608

(22) International Filing Date: 12 June 2000 (12.06.2000)

(25) Filing Language: English

(26) Publication Language: English

(71) Applicant and
(72) Inventor: CHOI, Janglak [KR/KR]; 582-3, Shin-jung-3dong, Nam-ku, Ulsan 680-013 (KR).

(74) Agent: LEE, Joongseop; 1Ga-4, Bumin-dong, Seo-ku, Pusan 602-071 (KR).

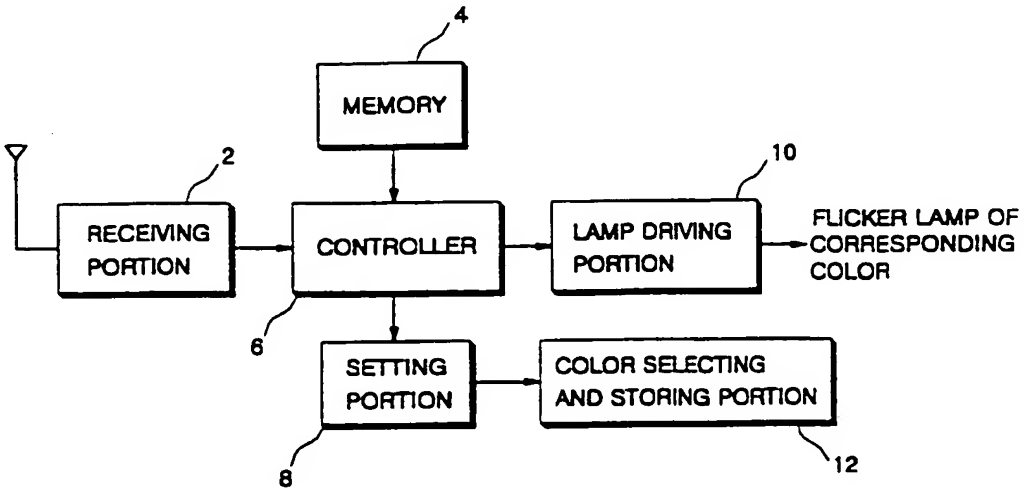
(81) Designated States *(national)*: AE, AL, AU, BA, BB, BG, BR, CA, CN, CR, CU, CZ, DM, EE, GE, HR, HU, ID, IL, IN, IS, JP, KP, LC, LK, LR, LT, LV, MG, MK, MN, MX, NO, NZ, PL, RO, SG, SI, SK, SL, TR, TT, TZ, UA, US, UZ, VN, YU, ZA, ZW.

(84) Designated States *(regional)*: ARIPO patent (GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZW), Eurasian patent (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM), European patent (AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE), OAPI patent (BF, BJ, CF, CG, CI, CM, GA, GN, GW, ML, MR, NE, SN, TD, TG).

Published:
— *with international search report*

For two-letter codes and other abbreviations, refer to the "Guidance Notes on Codes and Abbreviations" appearing at the beginning of each regular issue of the PCT Gazette.

(54) Title: VISUAL NOTIFICATION DEVICE FOR A PORTABLE PHONE



(57) Abstract: A visual notification device for a portable phone, which can easily identify a received phone number by changing the color of an indicating lamp to the selected color. The phone number and the selected color assigned to it, is stored within the device. The device consists of a receiving portion (2) for receiving a transmission signal from a sender through an antenna; a setting portion (8) with an input unit; a memory (4) for storing a plurality of phone numbers inputted by the input unit; a color selecting and storing portion (12) for selecting and storing the color of the lamp entered by the input unit; a lamp driving portion (10) for generating a driving signal for changing the color of the lamp to the selected color assigned to the phone number when the controller (6) detects a match between the received phone number and the plurality of stored phone numbers.

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VISUAL NOTIFICATION DEVICE FOR A PORTABLE PHONE

BACKGROUND OF THE INVENTION

1. Field of the Invention

The present invention relates to a lamp flickering device for a portable phone, and more particularly, to a lamp flickering device which can easilly identify a received phone number by differing a color of the lamp which is flickered according to whether the received phone number is consistent with a specific phone number stored in a memory of the portable phone.

2. Description of the Related Art

At present, many mobile communication companies are providing various communication services with a plurality of portable phone subscribers. The portable phone is used by many peoples as essential means for communicating with a friend, a love and a family.

In the meantime, among various communication services of the portable phone, the service of informing the other party's phone number of the user is provided from a mobile communication company. The service is to display the sender's phone number on a display of a receiver's portable phone, so that a receiver can acknowledge the sender's phone number through the display of the portable phone.

However, as described above, the portable phone has benn used

by many people, but there has been a disadavantage in which when the portable phone is ringing, the receiver of the portable phone cannot acknowledge who is calling before the receiver identifies the sender's phone number, since a color of a lamp is unified by only one color, for example, a red color.

SUMMARY OF THE INVENTION

It is, therefore, an object of the present invention to provide a lamp flickering device for a portable phone being capable of easily identifying a sender within a short time by comparing a phone number of the sender with a specific phone number set to a memory and, if the phone number of the sender corresponds to the specific phone number set, flickering a lamp of the portable phone with a color corresponding to the specific phone number.

It is another object of the present invention to provide a method for embodying a DNA structure in an article after analyzing and synthetically editing the DNA structures of plural closely-related persons, for example, newly married couple, so that article occupying men can express their relation and honor the memory, and the article thereof.

To achieve the above object, there is provided a lamp flickering device for a portable phone, including : a receiving portion for receiving a transmission signal from a sender through an antenna; a setting portion having an input unit for transmission and receptioin of the signal; a memory for storing a plurality of phone numbers

inputted through the input unit of the setting portion; a color selecting and storing portion for selecting and storing the color of the lamp by the input unit of the setting portion; a lamp driving portion for generating a driving signal for flickering the lamp; and a controller for outputting a driving control signal through the lamp driving portion for flickering the lamp of the color corresponding to the phone number in case that it is checked that the phone number corresponding to the received signal is consistent with the phone number previously stored in the memory.

When the lamp is flickered, a music service or the other control signal corresponding to the received phone number provided by a mobile communication company is transmitted. A plurality of lamps are installed by a plurality of colors. And also, the present invention further comprises a color emitting unit for emitting various colors, for only one lamp used.

BRIEF DESCRIPTION OF THE DRAWINGS

The above and other objects, features and advantages of the present invention will become more apparent from the following detailed description when taken in conjunction with the accompanying drawings in which:

FIG. 1 is a view illustrating a schematic block diagram of a lamp flickering device of a portable phone according to the present invention;

FIG. 2 is a flow chart illustrating a lamp setting procedure of the lamp flickering device of a portable phone according to the present invention;

FIG. 3 is a flow chart illustrating an operation of the lamp flickering device of FIG. 1.

DETAILED DESCRIPTION OF THE PREFERRED EMBODIMENTS

A preferred embodiment of the present invention will be described herein below with reference to the accompanying drawings. In the following description, well-known functions or constructions are not described in detail since they would obscure the invention in unnecessary detail.

FIG. 1 is a view illustrating a schematic block diagram of a lamp flickering device of a portable phone according to the present invention. As shown in FIG. 1, a reference number 2 indicates a receiving portion for receiving a transmission signal from a certain sender through an antenna. The reference number 4 indicates a memory for storing a specific phone number set according to a procedure of FIG. 2 after inputting the specific phone number through a setting portion of the portable phone. The setting portion 8 has an input unit (not shown) for inputting several functions of the portable phone, for example, a numeric key and a plurality of function keys.

The reference number 12 indicates a color selecting and storing portion for selecting a color by a signal inputted through a controller 6

and the setting portion 8, and storing the color of the lamp (not shown) of the portable phone. The reference number 10 indicates a lamp driving portion for flickering a lamp of the portable phone with a corresponding color according to a control signal of the controller 6. A plurality of color lamps (not shown) can be separately provided, or only one lamp can be provided so that a plurality of colors are emitted through a color emitting unit (not shown) separately provided, for emitting various colors according to a driving signal of the lamp driving unit 10.

The controller 6 haivng an overall control function of the lamp flickering device, compares the other party's phone number received through the receiving portion 2 with the phone number stored in the memory 4 and generates a control signal to flicker the lamp set correspondingly to the phone number if the phone number is consistent.

FIG. 2 is a flow chart illustrating a lamp setting procedure of the lamp flickering device of a portable phone according to the present invention.

As shown in FIG. 2, the portable phone user press numeric keys corresponding to a specific phone number (step S2), and then selects a menu key (not shown) to select a flickering lamp color (step S4). After that, if a menu is displayed on a display, one of the lamp color is selected or revised by the user (step S6). And then, if a confirmation key is pressed (step S8), the lamp setting procedure of the lamp flickering device is terminated for the corresponding specific phone number.

At this time, the portable phone user can previously set the lamp of

the color corresponding to the phone number according to a home phone number, a love phone number, a friend phone number, and a job phone number. For example, a green color is for the home phone number, a red color for the job phone number, a yellow color for the love phone number, a blue color for the friend phone number and a colorless color for non-set phone number can previously set in the portable phone. Accordingly, it can be checked who is calling without answering the portable phone or without a separate particular operation.

FIG. 3 is a flow chart illustrating an operation of the lamp flickering device of FIG. 1.

As shown in FIG. 3, the sender's phone number and a signal provided by the mobile communication company are received through the antenna of the portable phone (S10). And then, the controller 6 checks the received phone number (S12). After that, the controller 6 compares the received phone number with the phone number stored in the memory 4 to check whether the received phone number. is consistent with the home phone number (S14). If it is consistent, a control signal is outputted through the lamp driving portion 10 to flicker the lamp of a predetermined color corresponding to the home phone number (S24).

Also, if the received phone number is not consistent with the home phone number in step S14, it is checked that the received phone number is consistent with the job phone number (S16). If it is consistent, the step S24 is performed.

Also, if the received phone number is not consistent with the job

phone number in step S16, it is checked that the received phone number is consistent with the love phone number (S18). If it is consistent, the step S24 is performed.

Also, if the received phone number is not consistent with the love phone number in step S18, it is checked that the received phone number is consistent with the friend phone number (S20). If it is consistent, the step S24 is performed.

Also, if the received phone number is not consistent with the friend phone number in step S20, it is controlled to flicker a lamp of color corresponding to a non-set phone number.

In the meantime, a music or voice serivce from the mobile communication company can be provided togther with the function of flickering a lamp of a specific color corresponding to the specific phone number.

As described above, according to the present invention, there has been advantages in which if the user previously sets the lamp color corresponding to the specific phone number relating to himself, the specific received phone number can be immediately confirmed within a short time by flickering the lamp set.

While the invention has been shown and described with reference to a certain preferred embodiment thereof, it will be understood by those skilled in the art that various changes in form and details may be made therein without departing from the spirit and scope of the invention as

defined by the appended claims.

WHAT IS CLAIMED IS:

A lamp flickering device for a portable phone, comprising :

a receiving portion for receiving a transmission signal from a sender through an antenna;

a setting portion having an input unit for transmission and receptioin of the signal;

a memory for storing a plurality of phone numbers inputted through the input unit of the setting portion;

a color selecting and storing portion for selecting and storing the color of the lamp by the input unit of the setting portion;

a lamp driving portion for generating a driving signal for flickering the lamp; and

a controller for outputting a driving control signal through the lamp driving portion for flickering the lamp of the color corresponding to the phone number in case that it is checked that the phone number corresponding to the received signal is consistent with the phone number previously stored in the memory.

2. The device of claim 1, wherein when the lamp is flickered, a music service or the other control signal corresponding to the received phone number provided by a mobile communication company is transmitted.

3. The device of claim 1, further comprising a plurality of

lamps by colors.

4. The device of claim 1, further comprising a color emitting unit for emitting a plurality of colors with only one lamp.

Fig. 1

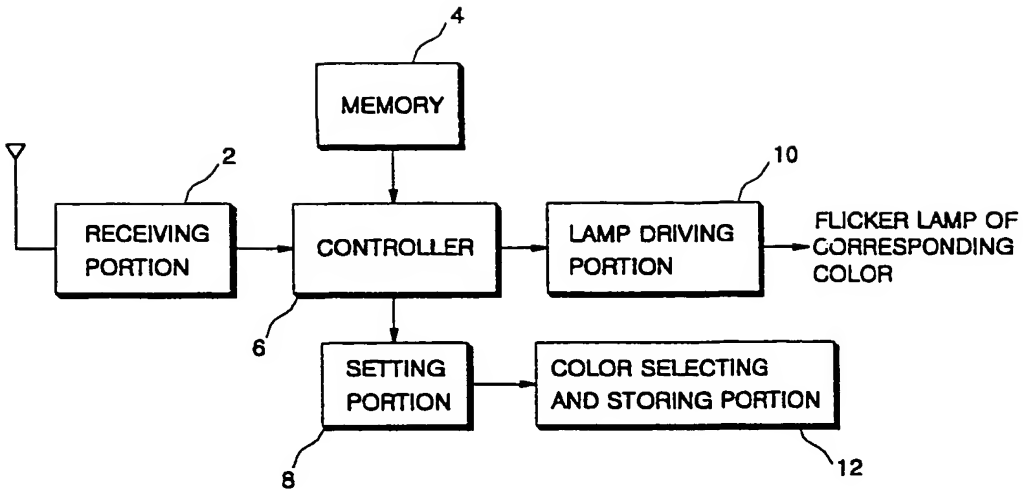

4
MEMORY
2
RECEIVING PORTION
CONTROLLER
10
LAMP DRIVING PORTION
FLICKER LAMP OF CORRESPONDING COLOR
6
SETTING PORTION
COLOR SELECTING AND STORING PORTION
8
12

Fig. 2

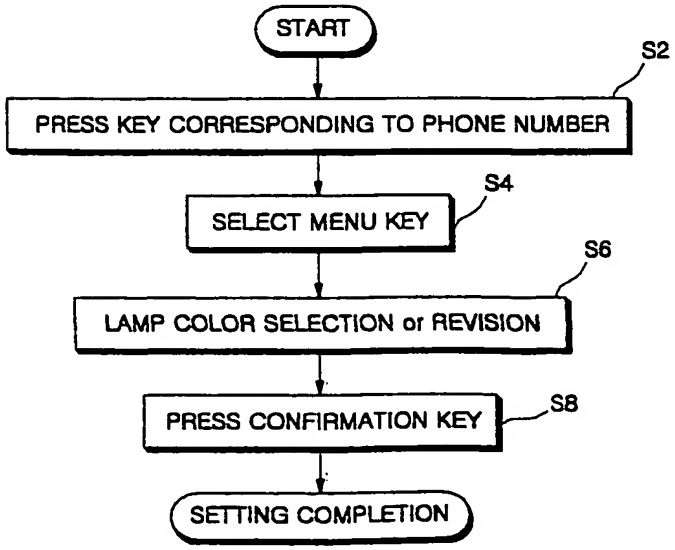
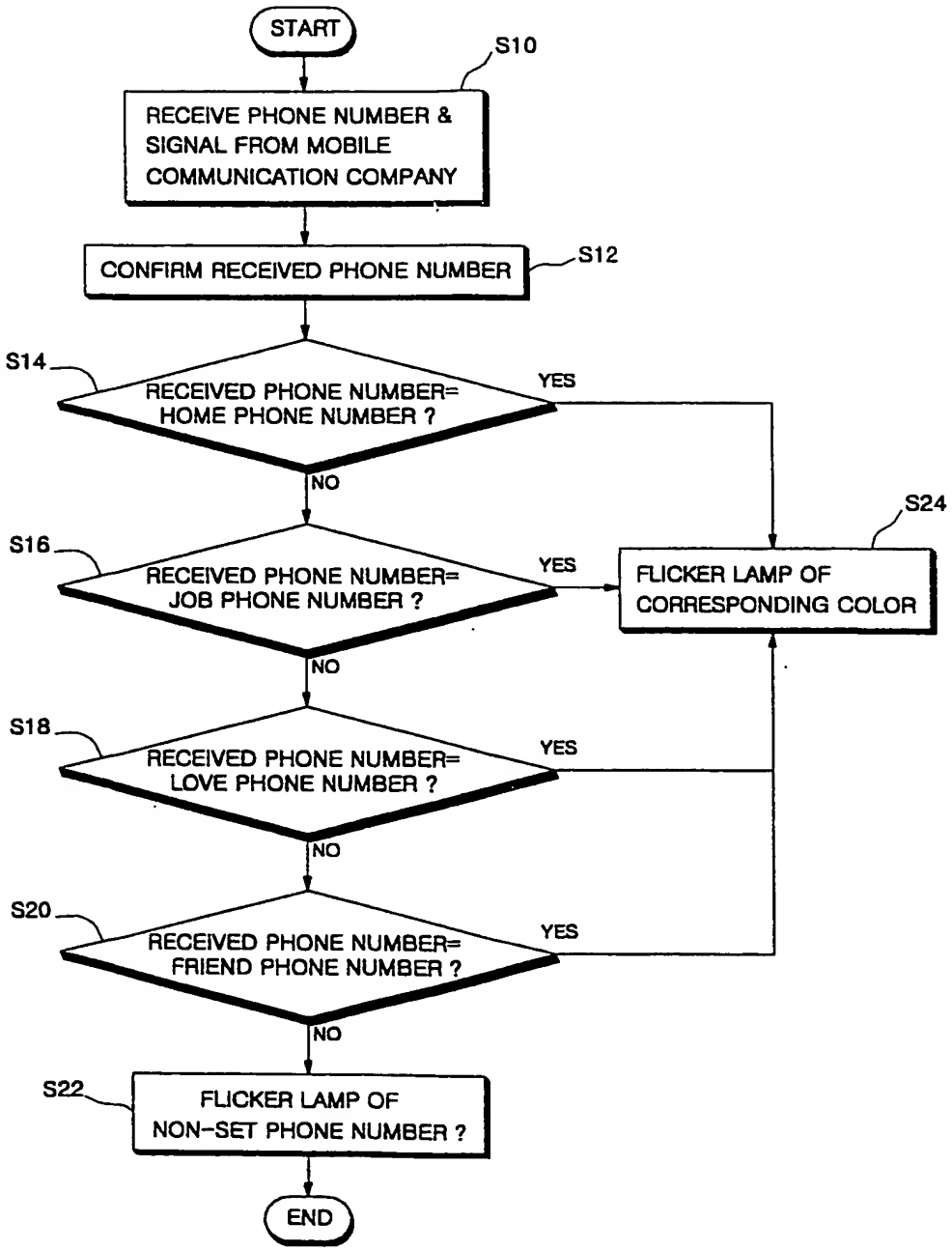

START
S2
PRESS KEY CORRESPONDING TO PHONE NUMBER
S4
SELECT MENU KEY
S6
LAMP COLOR SELECTION or REVISION
S8
PRESS CONFIRMATION KEY
SETTING COMPLETION

Fig. 3


START
S10
RECEIVE PHONE NUMBER & SIGNAL FROM MOBILE COMMUNICATION COMPANY
CONFIRM RECEIVED PHONE NUMBER
S12
S14
RECEIVED PHONE NUMBER= HOME PHONE NUMBER ?
YES
NO
S16
RECEIVED PHONE NUMBER= JOB PHONE NUMBER ?
YES
NO
S18
RECEIVED PHONE NUMBER= LOVE PHONE NUMBER ?
YES
NO
S20
RECEIVED PHONE NUMBER= FRIEND PHONE NUMBER ?
YES
NO
S22
FLICKER LAMP OF NON-SET PHONE NUMBER ?
S24
FLICKER LAMP OF CORRESPONDING COLOR
END

INTERNATIONAL SEARCH REPORT

International application No.
PCT/KR 00/00608

CLASSIFICATION OF SUBJECT MATTER

IPC[7]: H04M 1/57, 1/66; H04Q 7/32

According to International Patent Classification (IPC) or to both national classification and IPC

B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)

IPC[7]: H04M, H04Q, H04B

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Electronic data base consulted during the international search (name of data base and, where practicable, search terms used)

WPI, EPODOC, PAJ

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	US 5946636 A (UYENO et al.) 31 August 1999 (31.08.99) abstract, figs. 3, 4; column 2, line 21 - column 5, line 9; claims 1, 2,4-10,12,13.	1-3
X	JP 11 220524 A (MATSUSHITA ELECTRIC IND CO LTD), (abstract), 30 November 1999. In: Patent Abstracts of Japan [CD-ROM].	1-3
A	WO 99/13628 A1 (ERICSSON MOBILE COMMUNICATIONS LTD) 18 March 1999 (18.03.99) abstract, fig. 1; page 2, line 30 - page 4, line 6.	1,2
A	GB 2337898 A (NEC CORPORATION) 1 December 1999 (01.12.99) abstract, figs. 1-3,9,10; page 3, line 13 - page 5, line 3; claims 1-5,9.	1,4

☐ Further documents are listed in the continuation of Box C. ☒ See patent family annex.

* Special categories of cited documents:
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„Y" document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art
„&" document member of the same patent family

Date of the actual completion of the international search	Date of mailing of the international search report
14 February 2001 (14.02.2001)	30 March 2001 (30.03.2001)
Name and mailing adress of the ISA/AT Austrian Patent Office Kohlmarkt 8-10; A-1014 Vienna Facsimile No. 1/53424/535	Authorized officer LOIBNER Telephone No. 1/53424/323

Form PCT/ISA/210 (second sheet) (July 1998)

INTERNATIONAL SEARCH REPORT

Information on patent family members

International application No.
PCT/KR 00/00608

Patent document cited in search report			Publication date	Patent family member(s)			Publication date
GB	A1	2337898	01-12-1999	AU	A1	23796/99	28-10-1999
				CN	A	1233901	03-11-1999
				GB	A0	9908773	09-06-1999
				JP	A2	11299114	29-10-1999
JP	A2	11220524	10-08-1999			none	
US	A	5946636	31-08-1999			none	
WO	A1	9913628	18-03-1999	AU	A1	90842/98	29-03-1999
				GB	A0	9719179	12-11-1997
				GB	A1	2329092	10-03-1999